



THE ANALYSIS OF AGENCY COST WITHIN STATE-OWNERSHIP STRUCTURES OF THE AIRLINE INDUSTRIES: DIRECT STATE-OWNED COMPANIES AND INDIRECT STATE-OWNED COMPANIES (OWNERSHIP VIA SOVEREIGN WEALTH FUND)

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Objectives

This study is conducted to investigate the significance of the two ownership structures, namely direct state-ownership and indirect state-ownership, in the context of airline companies. The research also extends to examine the underlying reason for the implied distinctions. Agency cost is the main measure used to compare the efficiency between the two ownership structures. This paper also seeks to test out the relative importance of each characteristic in relation to agency cost.

Summary

The findings supported two hypotheses: (H2) indirect state-owned enterprise has lower agency cost due to greater use of debt and (H4) indirect state-owned enterprise has lower agency cost due to the international diversification. The findings, however, rejected the two remaining hypotheses: (H1) indirect state-owned enterprise has lower agency cost due to greater transparency pressures and (H3) indirect state-owned enterprise has higher agency cost due to the international diversification.

Conclusions

In the comparison between indirect and direct state-owned airline companies, it is evident that indirect state-owned airlines performed more efficiently than direct state-owned airlines.

Key words: Agency Cost, Airline, State-ownership, Sovereign Wealth Fund

Language: English

Grade:

Contents

1. Introduction	6
1.1 Background	6
1.2 Research problem	8
1.3 Research Question	8
1.4 Research Objectives	9
2. Literature Review	10
2.1 Origins of DSOE and ISOE	10
2.2 Characteristics of Agency Cost	11
2.2.1 The separation of cash flow and voting rights	12
2.2.2 Information asymmetry	13
2.3 Airline industry and Agency Cost	13
2.4 Analysis of micro elements that lead to agency cost	16
2.4.1 Political objectives	16
2.4.2 Accountability and Transparency	18
2.5 Measuring Agency Cost	19
2.6 Conceptual Framework	21
3. Methodology	22
3.1 Introduction	22
3.2 Research Design	22
3.3 Population of the Study	23
3.4 Data Collection	24
3.6 Operationalization of the Study Variables	26
3.6.1 Measurement of Transparency and Accountability	26
3.6.2 Measurement of Political Involvement	28
3.6.3 Measurement of Agency Cost	29
3.7 T-Test: Paired Two Samples for Means	30
3.8 Limitations	31
4. Findings	32
4.1 Transparency	32
4.2 Debt	35
4.3 Internationalisation	36

4.4 Agency Cost.....	37
5. Discussion and Analysis.....	39
5.1 Differentiation of ownership structures	39
5.2 Impact on Agency Cost	42
5.3 Application to Airline Industries	43
6. Conclusion.....	44
6.1 Main Findings.....	44
6.2 Implications for International Business	45
6.3 Suggestions for Further Research	46
References	48

1. INTRODUCTION

1.1 Background

The emergence of privatization in late 1970s has spurred many controversies around privatization and state-ownership. Most of the arguments for and against state-ownership slowly surfaced around agency cost. Agency cost is the cost induced when managers do not maximise the interest of their shareholders; but maximising their personal interest, at the expense of the shareholders instead. The supporters of privatization were positive about the benefits induced by strict separation of business and politics. The clear distinction of business and politics means greater transparency, more objective decision making and fewer opportunities for expropriation of private benefits. The critics, on the other hand however, were sceptical of the effectiveness of privatization due to various social concerns such as market failure and the neglect of lower social classes. Gradually, the number of debates gave rise to the development of ownership branches, amongst which is ISOE (indirect state-owned enterprise, also known as sovereign wealth fund-owned-enterprises) and DSOE (direct state-owned enterprises) used in this thesis.

Before zooming into the different types of state-ownership structures, an understanding of the scope and definitive characteristics of state-owned enterprise is essential. A state-owned enterprise (SOE) is defined by the OECD using different attributes. Generally, SOE is “any corporate entity recognized by law as an enterprise, and in which the state exercises ownership, should be considered as an SOE” (OECD, 2015). Ownership and control of SOE is subjected “under the control of the state, either by the state being the ultimate beneficiary owner of the majority of voting shares or otherwise exercising an equivalent degree of control, which has the state of a country possessing more than 50% of the shares” (ibid). Another key term of this research is *ownership entity*, defined as “part of the state responsible for the ownership function, or the exercise of ownership rights in SOEs with either a single state ownership agency, a coordinating agency or a government ministry responsible for exercising state ownership” (ibid). This term is important because it is the differentiating factor of direct and indirect state-owned enterprise.

Direct state-owned enterprise (DSOE) is when the ownership entity of the SOE is the governmental ministry of the country. Some examples in the airline industry are Finnair, having 55.8% of shares owned by the Finnish Ministry of Finance (Finnair Oyj, 2016) and Garuda Indonesia, having 60.51% of shares owned by Ministry of State-owned enterprise Indonesia (PT Garuda Indonesia (Persero) Tbk, 2016).

Indirect state-owned enterprise (ISOE) is when the ownership entity of the SOE is under the Sovereign Wealth Fund (SWF) of the country. SWFs are pools of assets owned and managed directly or indirectly by governments to achieve national objectives (Blundell-Wignall, Hu & Yermo, 2008). Some examples in the airline industry are Singapore Airline, having 55.63% of shares owned by Temasek Holdings Pte Ltd. (Singapore Airline, 2017) and Emirates Airline, having 100% of shares owned by Investment Corporation of Dubai (Investment Corporation of Dubai, 2016).

The industrial setting for this thesis is the airline industry due to the diversified use of ownership structures to tackle the issue of agency cost.

This research is a novel case because it has a different target group (direct and indirect state-owned structure) that does not have a large pool of prior research. Most recent research on the ownership of an airline merely revolves around the impact of profitability (Chen, Chen & Wei, 2017). My research, however, seeks to expand the domains of ownership into the research of agency cost, which allows for greater understanding of the choice of state ownership than the existing descriptive studies of ownership structure and profitability (Backx, Carney, and Gedajlovic, 2002; Fernandes & Pires Capobianco, 2001; 2004).

1.2 Research problem

Agency cost remained as an important theory for most fields, penetrating concepts from accounting (Ronen & Balachandran, 1995; Watts & Zimmerman, 1983), finance (Fama, 1980; Fama & Jensen, 1983; Jensen, 1986), organisational behaviour ((Kosnik & Bittenhausen, 1992) and economics (Jensen & Meckling, 1976; Ross, 1973; Spence & Zeckhauser, 1971). For many years, famous researchers have been using various incentives policies and monitoring schemes to overcome the problem of agency cost (Jensen & Meckling, 1976; Liu, 1982; Beatty & Zajac, 1994). Given the number of research on agency cost however, there are still few studies that evaluate the relative presence of agency cost within state-ownership itself. This is due to the relatively new concept of ISOE adopted by only a few countries (Lee, 2014). Despite that, there is a need to understand why certain countries prefer to adopt the new ownership structure. Also, due to the prevalence of change from DSOE to ISOE in airline industries (Backx, Carney & Gedajlovic, 2002), it is also crucial to examine if this research is only applicable to the airline industry.

In addition to the broad level of ownership-profitability analysis, this thesis seeks to fill the apparent absence of the individual factor analysis within agency cost, specifically political objectivity and transparency. In summary, this thesis will concentrate on the relationship of the characteristics of direct versus indirect state ownership and the agency costs of the airline industry with the use of hypothesis testing.

1.3 Research Question

This research seeks to first compare the different state-ownership structures of airline companies with the characteristics of agency cost and then conclude on the impact of agency cost.

- Is there a relationship between agency cost and state ownership structure in the airline industry?

- What are the general characteristics of direct state-owned or indirect state-owned companies?
- To what extent is agency cost different in each structure?
- What are the specific characteristics of these structures in the airline industry?

1.4 Research Objectives

- To understand which structure has a lower agency cost.
- To understand the relative importance of each characteristic in relation to agency cost.

The next chapter will introduce the concept of agency cost in detail, specific to the airline industry and different ownership structures. The understanding of existing literatures will help us generate a better understanding of the different concepts and their potential correlation in the hypothesis.

2. LITERATURE REVIEW

Agency cost is the cost incurred when managers as agents of the company consciously choose to maximise their personal interest at the expense of shareholders' interest; although ideally, agents are expected to prioritise the interest of their principals, which in this case is the shareholders. This is an important concept to explore in relation to the DSOE and ISOE structure because current focus on profitability as a performance measure is a myopic view that seldom considers the underlying factors of profitability, amongst which is agency cost (Boardman, Shapiro, & Vining, 1997). Also, the literature review aims to contextualise the theory within the airline industry due to the diversity in ownership structures, which suggests a need for understanding the ownership changes, as well as the existing agency problems that are as yet uncovered.

The literature review will first define the scope of agency cost and the origins of DSOE and ISOE. Following this will be a breakdown of traditional agency cost factors and the introduction of new sub-components, which will help reason the comparative advantage of ISOE against DSOE. Finally, a conceptual framework will attempt to justify the research question.

The main basis of literature analysis for comparison of DSOE and ISOE will be the agency cost theory. The theory will be explored in broad terms, as a factor of separation of cash flow and voting rights and information asymmetry. With the expansion of each factors into political objectives and transparency, this paper can better distinguish the differences of DSOE and ISOE. Ultimately, the application of hypothesis towards the airline industry can also test the relevance of research in airline industry.

2.1 Origins of DSOE and ISOE

In early studies, Jensen & Meckling (1976) laid the foundations of agency being contingent upon monitoring activities and the separation of ownership and control. This overarching concept of agency cost can be traced to the origins of DSOE, ISOE and SOE in general. In the past, the establishment of SOE centred around public policy goals, such as necessary provision of public good, addressing market failures, curbing oligopolistic

behaviour and promoting social objectives like employment generation, regional development, poverty and minority group protection (World Bank, 2014a).

As agency cost increases, specifically the divergence of interest between principals (dominant government shareholder) and agents (manager), the objectives of SOE gradually veer towards political agendas and expropriation of private benefits (Tirole, 1994). Shleifer & Vishny (1994) further delved into the mechanisms of agency problems, which is the use of government subsidies and bribes in facilitating a two-way political agenda-expropriation relationship. Both these authors clearly established the extent of agency problem in SOE structure despite the benevolent initial objective of solving market failures. Subsequently, the adoption of ISOE became the source of solution towards this conflicting problem. Indeed, there exist presumed similarities between DSOE and ISOE due to their origin's development. However, the following evaluation of literatures will be key towards discovering the dichotomous characteristics of DSOE and ISOE.

The motives for SWF were never a definite answer. Singapore's SWF - Temasek Holdings was founded on the hopes for better long term international diversification of assets; China's SWF – China Investment Corporation was created to sustain its exchange rate strategy; Norway's Government Pension Fund served the purpose of non-renewable energy fund and national pension fund (Das, Mazarei & Hoorn, 2010; Chen, 2016). As seen, there is no unifying factor that clearly explains the reasons for SWF. All but one author, Truman (2007) mentioned the possibility of mitigation of agency cost with transparency as the underlying reason for SWF. This hence provides us an opportunity and direction to analysing the role of agency cost in SWF.

2.2 Characteristics of Agency Cost

Agency cost was first introduced as a research of risk-sharing behaviour among individuals and groups (Arrow, 1971; Wilson, 1968). Due to the results of different risk-averse behaviours among different stakeholders, Jensen & Meckling (1976) and Ross (1973) then became the forefathers of agency theory when they identified the primary

factor being the principal-agent relationship. This relationship bound by a contractual relationship for agents to perform task delegated by the principals does not guarantee the actions from the agents (ibid). This stems from the principal-agent interest divide and the difficulty in monitoring the behaviours of agents (ibid). Subsequently, many policies such as board structures (Fama & Jensen, 1983; Kosnik, 1987), salary incentives (Eisenhardt, 1989), acquisition and diversification strategies (Amihud & Lev, 1981), ownership and financing structures (Argawal & Mandelker, 1987; Jensen & Meckling, 1976) and vertical integration (Anderson, 1985; Eccles, 1985) became the focus to align the interest of agents (managers) with the principals (shareholders), both focusing on maximising company's wealth rather than managers' private wealth.

Although there has been a wide research scope on agency cost across different sectors and perspectives, we will only concentrate on the 2 major factors of agency cost, namely, the separation of cash flow and voting rights (Berle & Means, 1932) and information asymmetry (Hayek, 1945).

2.2.1 The separation of cash flow and voting rights

The separation of cash flow and voting rights is when the managers of the company are not the owners of the companies and hence are unlikely to prioritise company's benefits, in accordance with shareholder's interests (Berle & Means, 1932). In light of this issue, board of directors is established to align both interests (Jensen & Meckling, 1976). Employee as shareholder schemes also strive to incentivise managers (ibid). Regardless of efforts to reconcile interest, the differing levels of risk perception for managers and shareholders is another challenge that can be difficult to eliminate (Mawanza, 2014). Also, in our case, the large bloc-shareholding of SOE further amplifies the immunity of managers as this means that managers will remain as minority shareholders regardless of their efforts (Wang, 2010). As seen, agency cost persists and evolves in different ways, regardless of ways to curb. To further investigate the root causes of agency cost in SOE, the dissection of cash flow and voting rights to transparency is essential.

2.2.2 Information asymmetry

Information asymmetry is another source of agency problem. Hayek (1945) was the first to theorise the benefits of knowledge to the economy as a whole. However, only when strengthened by Jensen and Meckling's (1976) theory on the imbalance distribution of knowledge, was the relationship between information asymmetry and agency cost established. Referring to the same reasoning of principal-agent interest divergence, information is not available to both parties often due to conflicting interest, causing agency cost. Taking the role of both shareholder and government, there exist certain political information that remains sensitive for disclosure to managers of the firms (March, 1962). Vice-versa, managers might feel the urge to restrict information flow to shareholders for their private benefits (Shleifer & Vishny, 1994). This will cause detriments to the company and hence transparency is a new variable in this thesis.

2.3 Airline industry and Agency Cost

A broad overview of the airline industry governance will lead to a result of various ownership structures. Backx, Carney and Gedajlovic (2002) presented the most comprehensive macro structures of airline ownership – private, mixed and public. Later in 2002, Carney and Dostaler also explored the other variations of airline ownership – managerial, entrepreneurial, and stakeholder governance. Recently, the birth of ISOE with regards to the airline industry was implied by Stureson, McIntyre, and Jones (2015) and Abramov, Radygin, Entov and Chernova (2017). The evolutions of ownership across the years had yield many different opinions on their performances, however the real question lies with the underlying reasons for the changes in these airlines.

The SOE structure is retained by most airlines because it is believed that these airlines are able to stimulate economic progress, employment, trade and tourism, and capital retention (Chang, Williams & Hsu, 2004). Warden (2003) further adds that these airlines are essential to maintain national security. Examples of these airlines are Finnair, Singapore Airlines, Garuda Indonesia and Emirates Airlines. The performances of airlines

however became debateable when the research on the benefits of SOE vs privatisation rarely yield a consistent result. Research by Boardman and Vining (1989) was refuted by Backx, Carney, and Gedajlovic (2002) who supported better performance of private airlines. It must be noted however, that the research by both authors were conducted within a specific outdated period, therefore does not account for the recent changes in ownership structure. Also, since they only accounted for the profitability measures of airlines, this research differentiates itself by analyzing the internal problems that causes such disparity in results for profitability using agency cost.

Next, we turn to another major ownership structure- private airlines. Privatisation is an important contrast to state-owned airlines due to their unique position of separation of political and management entities. As such, researcher such as De Alessi (1983) contended that private ownership is superior to state-owned. The benefits of privatisation in general is summarised by Shleifer (1998) being the greater possibility to innovate and lower cost as the involvement of governmental objectives are absent. Specific to the airline industry, Backx, Carney, and Gedajlovic (2002) also supported the private model of ownership for airline attributing to better utilization of airline assets and minimization of cost. Privatization does provide for a more efficient system, however, with the possibility of social detriments persisting, many have considered the compromising position of a mixed-ownership structure. This hinted at the adoption of ISOE, a subset of mixed enterprise in the airline industry.

Many airlines such as Singapore airline, Emirates Airline and Turkish Airlines are under the governance of SWF, therefore labelled as ISOE in this research. As compared to ISOE, DSOE airlines such as Air India, South African Airways and Aeroflot are performing at sub-standard levels (Doganis, 2001). Inevitably, there are outliers such as Malaysian Airline, a ISOE that performs worse than its peers and conversely, Finnair, a DSOE that performs outstandingly compared to others. These are coherent with Boardman and Vining (1989) arguing that mixed-enterprise did not outperform SOE despite outperforming private corporations. This contradicts the supporting argument on private corporations' performance exceeding SOE as mixed enterprise is expected to outperform

SOE as well. This inconsistency therefore indicates that there are substantial reasons to believe that the catalyst for ownership changes, more specifically the branching of SOE into DSOE and ISOE for the airline industry, lies beyond profitability measures but agency cost. There is a need to seek alternative analysis – agency cost of the ownership structures within the airline industry.

Agency cost in airline industry arise in 2 forms- political involvement and transparency. According to Doganis (1991), political objectives are very interlinked with state-owned airlines, ultimately affecting the financial capabilities of these airlines. Carney and Dostaler (2006) then explicitly highlight the severity of agency problems by showing how the airline industries are constantly facing shareholder pressures via voting rights and external takeover. These are instances of political involvement influencing the decision making of agents in maximising the wealth of the company.

In relative terms, ISOE are considered to have lower agency cost due to greater distancing of political-business relations (Das, Mazarei, and Hoorn, 2010) and greater pressure for transparency (Truman, 2007). While there are much benefits from DSOE airlines, Shleifer and Vishny (1994, 1998) and Bennedsen (2000) cautioned that it could be disguised as means to facilitate political or private benefits, thus highlighting the close relations with political objectives. For instance, by forcing excess employment and approving government projects that transfers wealth to political supporters. Also, compared against DSOE, ISOE has a greater pressure for accountability and transparency, assuming the adherence to Santiago Principles. Santiago Principles sets the standards for ISOE to provide openness of information, facilitating a more conducive environment for separation of political involvement, commitment towards better investment decisions and lower information asymmetry (Kern, 2008). Overall, it is therefore hypothesed that ISOE could have a lower agency cost than DSOE.

2.4 Analysis of micro elements that lead to agency cost

2.4.1 Political objectives

Political objectives are key to understanding the degree of agency cost within the two structures. This is especially important because fundamentally SOEs are created to fulfil government and social objectives. This poses a contradictory point of view in business sense because profit maximization could perhaps be achieved at the expense of government and social objectives (Goodman & Loveman, 1991). In this manner, ISOE could be seen as having a smaller degree of agency cost compared to DSOE due to its relatively distant connection with the state.

Referring back to the definition of Sovereign Wealth Fund by Das, Mazarei, and Hoorn (2010), the emphasis on separate entity, as opposed to internal government, in managing state fund is to “provide insulation against short term political pressure” This means that political involvement for ISOE is supposedly lower than that of DSOE. Despite the counter-arguments by Summers (2007) on the involvement of political powers in ISOE to gain unfair advantage for higher returns, it does not invalidate the distant relationship of ISOE that causes a division of principal and agent. Instead, it serves to reinforce the parallel nature of principal and agent interest, which is profit maximisation.

2.4.1.1 Asset allocation and overseas political objectives

The ability to diversify portfolio's assets internationally creates a tendency for political objectivity to be present in ISOE. It is argued that ISOE is an instrument for international political interest whereas DSOE is used in domestic affairs. Referring to agency cost, in this case, the divergence of principal and agent's interest is greater in ISOE than DSOE in the international arena. Batson (2008, 13 Sep) mentioned the case of China using reserves to influence Costa Rica's perspective towards Taiwan. In 2005, China's state-owned oil enterprise CNOOC and United Arab Emirates' DP World made efforts to acquire major U.S. ports and sparked great political reactions (Casselman, 2007). Similarly, the acquisition of Thai telecom firm Shin Corp owned by the family of previous

Prime Minister Thaksin Shinawatra in January 2006 caused a political crisis in Thailand (Aizenman & Glick, 2007). As seen, government could potentially influence the objectives of ISOE to favour certain political agenda. These series of events therefore also prompted the question of whether ISOE are more inefficient in terms of agency cost due to their lack of political objectives internationally.

Although this is seen as logical, Helleiner (2009) disproves the assertion by proving government objectives for ISOE are more domestic-focused than internationally focused. Shih (2009) also added that the conditions under which ISOE is used for political objectives are dependent on the political regime of the country. A politically unified country such as Singapore will use Temasek Holding for long-term profits and strengthening of domestic economy; whereas a politically fragmented country like China has a higher tendency to use ISOE for domestic political and bureaucratic conflicts, prioritizing foreign policy objectives and sacrificing long-term profits (ibid). Given the conditional reasons of ISOE in the influence of political interest, ISOE now becomes a weaker political instrument for governments hence a smaller divide between principal and agent.

2.4.1.2 The use of debt

The use of debt creates commitment incentives to managers and hence reduces agency cost (Grossman & Hart, 1982; Williams, 1987). The presence of debt is key to highlight the underlying agency cost, as demonstrated by Nazir, Saita and Nawaz (2012). In their results, the positive correlation of total debt and short-term debt ratio with asset utilization ratio (AUR) indicates a reduction of agency cost. This is because the use of debt reduces the free cash flow available to managers (Jensen, 1986, Stulz, 1990), and thus lowers the probability of overinvestment (Harvey et al., 2004; D'Mello and Miranda, 2010). In addition, the use of debt introduces the bank as an external monitoring agent, aligning the interest of profitability between managers and shareholders (Ang. et al., 2000). This hence explains the relevance of capital structure within political objectives in the comparison of ISOE and DSOE.

The 2 main factors explaining a greater use of debt by SOE are the inability to issue stocks and SOE's ability to borrow at favourable rates due to implicit or explicit loan guarantees (Dewenter & Malatesta, 2001). Contrast to that, Bertoni & Lugo (2017) explicitly mentioned the 3 reasons for SWF to use debt – alternative financing source, influence on bond market and strategy specific reasons. Since there is an apparent lack of agency cost analysis, an opportunity to explore the relationship between debt financing and agency cost is present.

Further research into the use of debt within the ownership structure reaps a result of ISOE taking a higher debt than DSOE (Wang, 2013). Many research concluded a lower debt ratio, hence implying a lower agency cost (Hardiyanto, Achsani, Sembel & Maulana, 2015; Wang, 2013; OECD, 2014).

2.4.2 Accountability and Transparency

As political involvement is inevitable in most SOE, the expectation for SOE to balance between market, social and political interest is high (Aharoni, 1981; 1986; Radon & Thaler, 2005). The complexity and need to reconcile the interests of these parties is evident through the setting of standards of accountability and transparency by OECD (2010). It is therefore concluded by the majority of researchers that accountability and transparency remain an essential component of SOE.

The bare minimum of general SOE transparency reporting standards were proposed by the Accountability and Transparency: A Guide for State Ownership report (OECD, 2010). Although the report outlined various ways of reporting and ensure transparency, the true implementation of transparency scheme only occur when coupled with strong legal regulations (OECD, 2016). For example, the Decree 1172 in Argentina requires for all the SOEs to disclose their financial information to the public; in Korea, the Official Information Disclosure Act 1998 even specify for the operations of SOE to be reported (World Bank, 2014b). However, within clauses of regulations, there exist exceptions whereby in practice, only a small handful of SOE truly adhere to the guidelines (OECD, 2016). This

system of transparency therefore depicts the inherent difficulty of ensuring transparency and accountability in SOE.

The relationship between accountability and transparency with agency cost is strong. In recent research, the relative degree of accountability and transparency of ISOE is proved to be higher than DSOE. This is because ISOE as a subset of SOE, has an additional layer of guidelines to ensure the adherence of transparency standards. On a macro level, the establishment of policies by different macro-institutions ensures the adherence of ISOE towards greater disclosure, easing the agency cost by different parties. Santiago Principles was implemented as a response towards the rise of SWF from the International Working Group of Sovereign Wealth Funds (IWG) (IWG, 2008). With detailed guidance in terms of appropriate investment practices, commitment to financial and non-political objectives, this principle seeks to create a benchmark for SWF to separate the management of SWF from the government and improve information flow (Kern, 2008). It is again acknowledged that oppositions tend to deny the effectiveness of such voluntary framework, stating the absence of solid penalty and formal monitoring committee. This is however defended by Bagnall & Truman (2013) stating that despite the inability to completely uphold the standards, there is proof of significant improvement that is sufficient to signal the progress for complete adherence in the future.

2.5 Measuring Agency Cost

In quantifiable terms, agency costs are costs that are used to prevent or rectify misalignment of interests. Some examples of agency cost include monitoring costs, auditing costs and additional incentive programmes. Ang, Cole and Lin (2000) made a distinction between direct agency cost and loss in revenues in measuring agency costs. Direct agency cost was the relative comparison between a zero-agency cost firm and the target firm. The rationale would be to consider the additional cost due to agency cost (eg expropriation of private benefits). Loss in revenues are the costs from inefficient utilisation of assets, due to poor investment decisions. The financial ratio used was annual sales to total assets. Overall, this is an alternative to measure the loss from investing in negative

value adding investments or expropriation of private benefits. The assumption of agents (managers) being the primary reason for interest divergence, however, created a flaw for this method of analysis. This is because in this research, the principal (government) is responsible for exploiting the benefits of the company in various political objectives. Also, the comparison of DSOE and ISOE could create potential problems due to the lack of benchmark against a perfectly zero-agency cost company.

With regards to accountability and transparency, the two most famous measurements implemented are the Santiago Principles and Truman's SWF scoreboard. In Oct 19, 2007, Truman presented his scoreboard at Conference on China's Exchange Rate Policy to showcase the levels of transparency of SWF (Truman, 2007). According to the 4 metrics of structure, governance, transparency and accountability, and behaviour, it was concluded that most SWF scored an average of 10.27 out of 25 points (ibid). This method even highlighted the alarming position of the Temasek Holdings scoring 13.50, merely the average, despite the high performance with regards to return on investment (ibid). This presentation then encouraged the birth of Santiago Principles. Santiago Principles was a guideline for SWF to achieve better transparency and distance separation of political powers. It is however not yet known for its effectiveness and was constantly dismissed by the public and Truman himself, stating that the voluntary nature of the principles was a signal of failure and a 100% compliance does not necessarily propel any SWF to a complete 25 points in his scoreboard (Bagnall & Truman, 2013). Overall, the current research field of DSOE and ISOE provides a large number of standards for transparency but few truly designed a structured and focused quantifiable model such as Truman's Scoreboard, hence the benchmark for transparency and accountability would be Truman's Scoreboard. In order to ensure a standardised, unbiased testing for both DSOE and ISOE, it is also important to remove ISOE specific elements such as investment types, investment strategy and currency composition.

2.6 Conceptual Framework

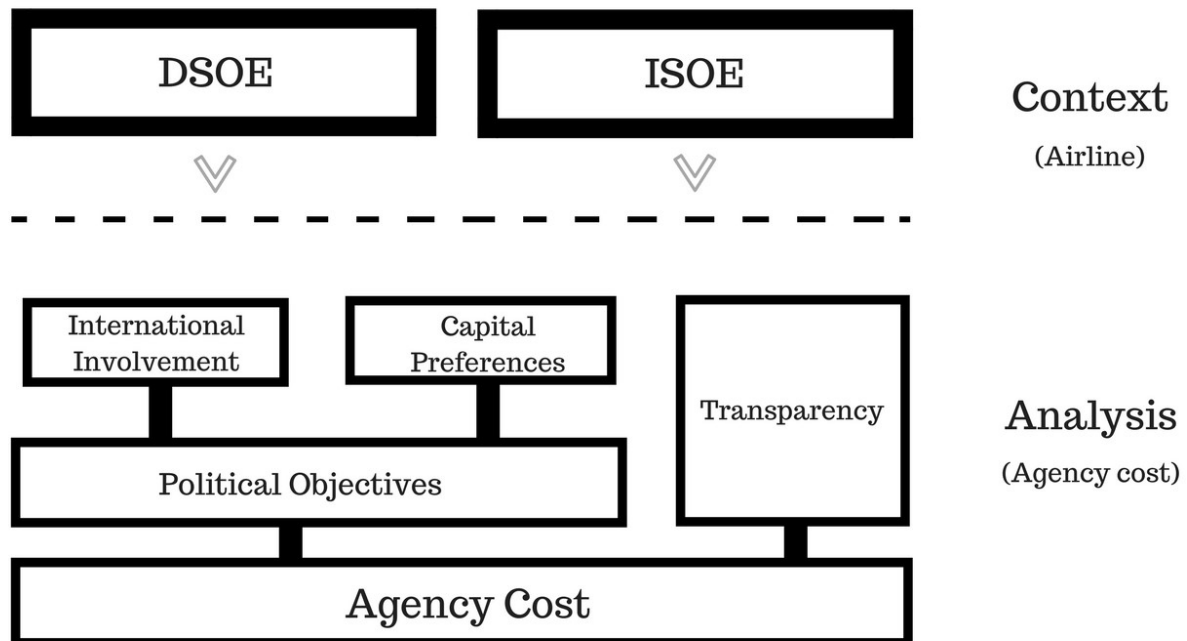


Fig. 1: Conceptual Framework

The framework clearly outlines the direction of the overall thesis. It starts with the analysis of 2 state-ownership structures, filtered through the broad factors of political objectives and transparency to evaluate their relative agency cost.

In this case, the dependent variables are the political motives, international involvement, capital preferences and transparency. They are all indicators of the agency cost. The independent variables are the 2 main state-ownership structures of DSOE and ISOE. The controlled variables shall be the industry of which the analysis is conducted. The setting of an industry provides for fairness because there is the riddance of operation, legal and financial complications within cross-industry analysis. Also, the abundance of ownership structure in airline makes it a relevant industry to apply this research.

2.7 Hypothesis

From the understanding of literature, the differences in ownership leads to the following hypothesis:

H1: ISOE has lower agency cost due to greater transparency pressures.

H2: ISOE has lower agency cost due to the greater use of debt.

H3: ISOE has higher agency cost due to the international diversification.

H4: ISOE has lower agency cost due to the international diversification.

3. METHODOLOGY

3.1 Introduction

This chapter discusses the research design, population of the study, data collection, operationalization of variables and statistical testing for significance.

3.2 Research Design

The reference design for this thesis would be the Truman scoreboard (2007). It is a scoreboard created to advocate for greater transparency of SWF. It was successful in inspiring the Santiago Principles. An updated version of scoreboard was published in 2012 showcasing the high correlation with other SWF transparency scoreboard, such as Linaburg-Maduell Transparency Index, the Revenue Watch Institute's 2013 Resource Governance Index, and Transparency International's 2012 Corruption Perceptions Index (Bagnall & Truman, 2013). The decision to choose Truman's scoreboard was due to the combination of the 3 perspectives of the mentioned research designs in measuring transparency, hence the comprehensiveness and flexibility of research elements.

Since we have other variables within the understanding of agency cost, the scoreboard will however be modified to add more variables such as finance, strategy, governance

and sustainability to tackle the research question in this thesis. The general element of transparency, which is the core of the original scoreboard will be retained.

Also, another feature similar to the scoreboard is the short-term horizon compared in this research. By taking only the most recent years 2015-2016, the possibility of outliers within other years can be reduced, yielding more reliable data. The data for 2017 is not considered due to the differences in closing accounting period for some companies that are extended into the first quarter of 2018. Also, the assurance of audit is not applicable for 2017 as most companies have yet to publish them in the first quarter of 2018.

The study on political objectives however is based on the research by Ang, Cole & Lin (2000) and Doukas, J.A. & Pantzalis, C. (2003). The main aims for the research is to examine the level of debt, the degree of internationalization and the level of agency cost based on accounting ratios.

3.3 Population of the Study

To provide a fair comparison, both types of chosen firms are evaluated based on their financial performance and stable political environment (Shih, 2009). Finnair, Garuda Air and Air China will represent DSOE, whereas Singapore Airline, Emirates Airline and Turkish Airways will represent ISOE. A summary of ownership is provided in Table 1. It is acknowledged that given the differences in market size, the results for these companies will be weighed against their assets (ROA) (refer to Table 2).

List of Airlines	Types	Owned by	Percentage Ownership % (2016)
Finnair	DSOE	Finnish Ministry of Finance/ Prime Minister's Office - Valtioneuvoston kanslia	55.8
Garuda		PT Garuda Indonesia (Persero) Tbk	60.5
Air China Limited		China State-Owned Assets Supervision & Admn Commission	100.0
Singapore Airline	ISOE	Temasek Holdings Pte Ltd.	56.0
Emirates Airline		Investment Corporation of Dubai	100.0
Turkish Airways		Türkiye Varlık Fonu Yönetimi Anonim Şirketi	49.1

Table 1: Airlines and ownership status (2016)

List of Airlines	Types	Weight by ROA
Finnair	DSOE	0.52
Garuda		0.01
Air China Limited		0.47
Singapore Airline	ISOE	0.20
Emirates Airline		0.38
Turkish Airways		0.41

Table 2: Weightage by ROA

3.4 Data Collection

The study is dependent solely on secondary data provided on the individual companies' website. The most common source of data is the annual report of individual companies. In some occasions, sustainability reports and financial statements are sourced separately on the website to correct the lack of information of the annual reports. This is acceptable because this research seeks to provide for the most accurate status of the companies. Therefore, the methodology used does not penalise for the format choice of publishing by individual companies, ie the choice to publish sustainability reports and annual report separately on the same webpage.

The period focused in this study is 2015-2016. The data extracted will be according to the reports published in that particular year. Any restated changes will not be taken into account with the assumption that all errors are uniform across the years. Although restated financial statements can provide for greater accuracy in financial statements, data extracted in the final year will not have the same accuracy advantage as the previous years as most data are not available yet. With the assumption of only systematic errors and zero random errors, the data for each year will be more comparable.

The reason for a short-term horizon of 2015-2016 is to eliminate possible outliers in the data due to ad hoc projects by individual companies. This can be hinted by financial indicators, such as, a large outflow of assets, higher cost and greater debt etc. Also, with the use of recent years data, this research will be more relevant to address any agency cost of either ownership structures, if any significant differences are proven amongst them.

The use of accounting ratios is key to analysing the raw data extracted. The main reason for the use of accounting ratios is the differences in currency reported. For an unbiased comparison between the airlines, accounting ratios eliminate the complications of currency conversions due to the volatility of currency market.

Another precautionary measure to standardise the data for each airline is to take the financial data from the combination of parent and subsidiaries. As opposed to the carved-out method of reporting, the actual earnings and cost of the airlines will not be reflected. Also, the evaluation for selective reporting will differ between companies, thus not ideal for the use of this research.

The main assumption of data collection via secondary data is that transparency is 100%, despite having to test the transparency in these companies as one of the research

purpose. However, this research proceeds with this method because the test for transparency itself does not require the assumption of transparency, but merely the availability of specific data in their annual reporting to the public.

3.6 Operationalization of the Study Variables

3.6.1 Measurement of Transparency and Accountability

In this segment, the measurement for transparency is further broken down into general features, financial, governance, strategy and sustainability.

Under the category of general features, the scores will provide an overview of the minimum requirements of a fully comprehensive and transparent report. “Annual report” shows the number of the annual report provided within the years of 2015-2016. A consistent reporting system by individual companies will yield a maximum score of 2.

Auditing is another measure for general transparency. It is acknowledged that both internal and external audit plays a role in ensuring transparency in both internal management level and external entities. Internal audit helps curb agency cost by overseeing the internal governance system (Cai, Hillier, Tian & Wu, 2015); whereas external audit represents the interest of the general public or third party institutions in verifying the credibility of the reports presented (Chow, 1982). Publication of audit reports, in this study, however, only takes into account the external audit reports. This is due to the nature of non-publication of internal reports being less likely disseminated within and outside the organisation. According to Institute of Internal Auditors (2012), only 86% of companies within the surveyed countries are publishing their internal audit report on the internet. To be more objective, on the intranet, the percentage of companies only differ by 11%, at 75%. Overall, there is an apparent lack of information across companies that creates a level field by excluding internal audit reports.

The frequency of auditing, together with the publishing of audit reports informs the public of the level of credibility of a certain company. A robust audit function, independence of auditing, coupled with both internal and external auditing is able to ensure an acceptable level of transparency (OECD, 2016; AARF, 2001). Following that, the questions associated with our scoreboard are the frequency of regular external audit. This can be found in the explanation of audit guidelines of each company. 1 point is awarded for every audit year. Next, the publication of the audit report is important to signal accessibility. 1 point is awarded for every published audit report. Lastly, the independence of external auditors must be established. 1 point is awarded to companies if external auditors are employed for the duration of 2 years of publications.

The finance segment is used to further distinguish the transparency of each companies within the different ownership categories. “Source of fund” is an indicator towards the reporting of balance sheet, showing the 2 sources of capital - debt and equity. A maximum score of 2 is awarded for financial statements published in the years of 2015-2016. “Subsidiaries” is examined through the reporting of subsidiaries financial statements and ownership percentage. 1 point is awarded per year if the company provide financial information of its subsidiaries within their financial statements. “Leasing agreement” is unique in the airline industry due to the nature of aircraft leasing. This is therefore an important information to be reported. Information published in the annual report with regards to aircraft leasing will be given 1 point per year. “Management principles” refer to the listing of guidelines adhered to by each airline. This is important because it extends into the auditing, accounting, sustainability and legal guidelines of each companies. The reference towards specific guidelines within the different segments of annual report will grant each airline 1 point per annual report. Lastly, “shareholder structure” explains the declaration of top shareholders within the airlines. 1 point is awarded to any exhibit or description of top shareholders who total up a 50% of the company.

Governance is made up of “general meeting agenda”, “risk assessment” and “remuneration”. “General meeting agenda” refers to the reporting of general meeting agenda in the annual report. 1 point is awarded per report. “Risk assessment” is used to

understand the airline's ability to forecast and disclose potential risks. 1 point is awarded to the listing of risks within each annual report. "Remuneration" of executives is important to promote transparency and therefore 1 point is awarded to the publication of types and level of executive remuneration per year.

Strategy consists of highlights of a company and stakeholder engagement. "Highlights" published informs the public on the challenges and growth of a company in general, given the strategy proposed in previous years. 1 point per report is awarded for any business overview within the reports. "Stakeholder engagement" communicates to different stakeholders the strategy targeting them. This way, the annual report is considered transparent to different levels of stakeholders and public. 1 point is awarded for the reporting of strategy in each report.

Sustainability reporting is now becoming a standard in various industries, therefore is essential as a component of transparency. 1 point is awarded for a comprehensive segment addressing sustainability issues. A mere mention of environmental consideration without substantiating statistical figures is not acceptable. It is however acceptable to consider a separate sustainability report than the annual report alone.

The extraction of data is followed by the calculation of average of scores for each airline. Then, the results of individual airline are weighted according to their ROA. The average of each ownership structure is also calculated to provide for a simplistic comparison. Overall, a paired sample t-test will be used to provide for a better statistical comparison.

3.6.2 Measurement of Political Involvement

3.6.2.1 *Use of Debt*

Debt to equity ratio measures the level of debt financing in comparison to equity financing. In the literature review, the increase in debt is seen as a proxy for lower agency cost. Following the reasoning, the level of debt is essential to provide for a clearer

understanding of agency cost within each ownership structure. The formula for debt-to-equity ratio is as followed:

$$\text{DE Ratio} = \text{Total Debt} / \text{Shareholders Equity}$$

3.6.2.2 International Diversification

International operation between the 2 ownership structures is measured via the formula:

$$\text{Foreign Sales Ratio (FSALE)} = \text{Foreign sales} / \text{Total Sales}$$

A greater sales ratio explains the degree of internationalisation of the airline. All of the data extracted are according to the geographical segmentation of each airline's revenue, with the exception of Singapore Airline. This is because there are no domestic sales available for Singapore airline. Also, another key note is that since there is a lack of passenger traffic revenue breakdown, the estimation of sales is based on revenue which can originate from airline passengers and cargo freight.

3.6.3 Measurement of Agency Cost

In order to capture agency cost, the following accounting formulas are used:

(1)AC1=Market-Book ratio of equity, where

$$\text{Market Value} = \text{Market Price} * \text{Shares Outstanding}$$

$$\text{Book value} = \text{Total asset} - \text{Intangible asset} - \text{Total liability}$$

According to Xiao and Zhao (2014), market to book ratio is a good approximation of agency cost. As explained, with the presence of agency cost, the stock market will react unfavorably, causing market value to decrease. AC1 is therefore useful in showing the reflected value of the market values in comparison to the accounting ratio of book value. In the case where market values are lower than book value, then the airline is assumed to have a significant agency cost.

The share prices extracted is following the adjusted close for the 31st of December each year. In the collection of data, however, Emirates airline presented a problem due to the lack of share prices in the annual report, financial statements and general trading platforms. This hence led to the considerations of alternatives for agency costs.

(2)AC2= Net Income/Total Asset

Return on Assets is useful in understanding the efficient use of asset in generating income. As agency cost increase, management of the firm is assumed to be inefficient in the usage of assets, for example, lax monitoring of operating cost, excessive perquisites consumptions or the neglect in decision making for the use of assets, thus decreasing ROA. The only flaw within this indicator is the use of ROA as both the results, as well as the weighting factor.

(3)AC3=EBITDA/Total Asset, where

EBITDA =Operating Income before depreciation – interest – tax - depreciation

In order to further examine agency cost, EBITDA is a useful indicator of the earnings without the influence of depreciation, tax or debt interest payments. This way, most companies are comparable regardless of the differences in taxation and depreciation regulations between countries. Also, the level of debt with the potential influence on interest payment and tax shield is also eliminated. Overall, EBITDA ensures a fairer comparison of across different companies despite having the results weighted against the level of assets and equities.

3.7 T-Test: Paired Two Samples for Means

This research will conduct a paired t-test using two samples – DSOE and ISOE. This statistical design requires for a dependent nature for the samples and a pairwise matching of individual samples that possess similar but not identical traits. In this case, the pairing

will be according to the rankings of results within each ownership structures. For example, the airline from each structure with the greatest results will be paired, the lowest result forms another pair and the remaining airline forms the last pair.

The two ways of interpretation of this test are the p-value and t-stat value. For the p-value, the comparison is against the predetermined level of $\alpha = 0.05$. At this level, if the results produce a p-value smaller than 0.05, the test is significant. Conversely, a p-value greater than 0.05 will be rejected and conclude for an insignificant test result. The second method is the comparison between t-critical and t-stat. In a one tail test, the null hypothesis for a t-test is rejected when the t-obtained is equal to, or more extreme than, the t-critical value. Only the absolute values of the t-critical and t-stat values are used, which means the neglect of signs of those values. A greater concern for this method is also the consistency in tail direction with the context of the test.

Beyond the numerical understanding of the results, the accepting of the null hypothesis at an alpha level of 0.05 also means that there is a confidence level of 95% that a repeated test conducted will yield similar results as the one produced in this study.

3.8 Limitations

The use of secondary data from companies' annual report presumed that all companies are reporting the most accurate figures, hence implying a 100% compliance with transparency framework. The flaw in this design however is reflected in the differing transparency index across different frameworks, including our modified Truman scoreboard.

The second limitation is the targeted population for the design of Truman's scoreboard – sovereign wealth fund. The initial aim for the scoreboard is to propose for a benchmark for comparison for sovereign wealth funds. With the successful promotion of Santiago Principles, the applicability for ISOE is apparent. However, to justify the similar level of

relevance for DSOE would be to compare the variables tested against other research. With cross-references to Bushman, Piotroski & Smith (2004), the use of similar variables in that research, such as governance, audit, timing and disclosure mirrors the variables tested for in this paper.

The understanding of agency cost in this case is different because unlike conventional agency cost cases, it is initiated by the principals (politicians) rather than the agents (managers). This hence weakens the position of AC1, AC2 and AC3 as an indicator of agency cost. The political agenda by principals therefore might not be reflected in the accounting ratios used to provide an estimation for agency cost.

The limitations on the statistical analysis are also essential. With a sample size of smaller than 30 and the absence of test for normality in the null hypothesis, the assumptions for the usage of a paired sample mean is weakened and could potentially produce skewed results.

4. FINDINGS

4.1 Transparency

Under the general category of transparency (table 3), it is seen that all airlines, regardless of their ownership types, are compliant with the minimum transparency guideline, which are the publication of annual reports, annual auditing and reporting of audit results, as well as the employment of external auditors for the duration of 2015-2016.

List of Airlines	Types	General				
		Annual Report	External Audit			
			Frequency/year	Published	Independent	
Finnair	DSOE	2	1	2	PWC	1
Garuda		2	1	2	Deloitte	1
Air China Limited		2	1	2	KPMG	1
Singapore Airline	ISOE	2	1	2	EY/KPMG	1
Emirates Airline		2	1	2	PWC	1
Turkish Airways		2	1	2	KPMG	1

Table 3: Transparency - General

Under the financial category (table 4), a general observation concludes that DSOE is more transparent due to the underperforming Emirates Airline in ISOE. It is to be noted that the low scores due to vague explanations are both from 2015 which is the outlier when compared to the other years.

List of Airlines	Types	Finance				
		Source of Fund	Subsidiaries	Leasing agreement	Management principles	Shareholder structure
Finnair	DSOE	2	2	2	2	2
Garuda		2	2	1	2	2
Air China Limited		2	2	2	2	2
Singapore Airline	ISOE	2	2	2	2	2
Emirates Airline		2	2	1	0.5	2
Turkish Airways		2	2	2	2	2

Table 4: Transparency – Finance

Under the governance feature (table 5), ISOE also underperformed with Emirates scoring 0 in “General meeting” and “Remuneration”. In a detailed examination of Emirate’s annual reports, it is understood that Emirates have yet to consider them a significant reporting segment as compared to other categories. Likewise, Turkish Airways merely provided a brief overview of the remuneration scheme without numerical evidence hence the lower score than others.

List of Airlines	Types	Governance		
		General Meeting	Risk Assessment	Remuneration
Finnair	DSOE	2	2	2
Garuda		2	2	2
Air China Limited		2	2	2
Singapore Airline	ISOE	2	2	2
Emirates Airline		0	2	0
Turkish Airways		2	2	1

Table 5: Transparency - Governance

In the strategy category (table 6), DSOE performed marginally better than ISOE. All airlines performed well for disclosing their yearly news and highlights. In the sustainability category (table 6), ISOE scores greater than DSOE. The interesting feature of this category is that despite the lack of publication of sustainable reports, it is noted that airlines with sustainability reports produced highly detailed reports with credible accreditations and association with major sustainability movements. Some examples include the Sustainable Development Goals and all rounded stakeholder engagement.

List of Airlines	Types	Strategy		Sustainability
		News/Highlight	Stakeholder engagement	Report
Finnair	DSOE	2	2	1
Garuda		2	1	2
Air China Limited		2	0	1
Singapore Airline	ISOE	2	0	2
Emirates Airline		2	0	1
Turkish Airways		2	2	2

Table 6: Transparency – Strategy and Sustainability

There was no significant difference in the transparency results weighted with ROA within the years of 2015-2016, $t(2) = 0.28 (< 2.92)$, $p=0.4 (> 0.05)$ (table 7). For samples tested, the level of transparency between ISOE and DSOE are similar.

t-Test: Paired Two Sample for Means (weighted with ROA)		
	<i>DSOE</i>	<i>ISOE</i>
Mean	8.68	7.84
Variance	53.44	8.80
Observations	3.00	3.00
Pearson Correlation	0.83	
Hypothesized Mean Difference	0.00	
df	2.00	
t Stat	0.28	
P(T<=t) one-tail	0.40	
t Critical one-tail	2.92	
P(T<=t) two-tail	0.80	
t Critical two-tail	4.30	

Table 7: T-test with ROA

4.2 Debt

A general observation will conclude the level of debts in the both weighted cases for ISOE is on average greater than DSOE. For weighted ROA, ISOE has an average 0.76 compared to 0.66 for DSOE (table 8).

List of Airlines	Types	AVERAGE (ROA)
Finnair	DSOE	0.975
Air China Limited		0.972
Garuda		0.033
Turkish Airways	ISOE	1.034
Emirates Airline		1.075
Singapore Airline		0.168

Table 8: Debt weighted with ROA

There was a significant difference in the level of debts weighted with ROA within the years of 2015-2016, $t(2) = 4.49 (> 2.92)$, $p=0.02 (< 0.05)$. For samples tested, ISOE has higher level of debts than DSOE.

t-Test: Paired Two Sample for Means (weighted with ROA)		
	<i>DSOE</i>	<i>ISOE</i>
Mean	0.66	0.76
Variance	0.29	0.26
Observations	3.00	3.00
Pearson Correlation	1.00	
Hypothesized Mean Difference	0.00	
df	2.00	
t Stat	-4.49	
P(T<=t) one-tail	0.02	
t Critical one-tail	2.92	
P(T<=t) two-tail	0.05	
t Critical two-tail	4.30	

Table 9: T-test with ROA

4.3 Internationalisation

From a general comparison of mean of FSALE for DSOE and ISOE indicates a greater level of internationalisation of ISOE airlines than DSOE. In the ROA weighted case, ISOE has a mean of 5.63 compared to DSOE with a mean of 2.69.

List of Airlines	Types	FSALE
Finnair	DSOE	0.962
Garuda		2.636
Air China Limited		4.494
Singapore Airline	ISOE	4.322
Emirates Airline		5.428
Turkish Airways		7.148

Table 10: FSALE Weighted with ROA

There was a significant difference in the level of international diversification weighted with ROA within the years of 2015-2016, $t(2) = 13.59 (> 2.92)$, $p=0.0027 (< 0.05)$. For samples tested, ISOE has higher internationalisation than DSOE.

t-Test: Paired Two Sample for Means (weighted with ROA)		
	<i>DSOE</i>	<i>ISOE</i>
Mean	2.6971	5.6325
Variance	3.1213	2.0281
Observations	3.0000	3.0000
Pearson Correlation	0.9955	
Hypothesized Mean Difference	0.0000	
df	2.0000	
t Stat	-13.5931	
P(T<=t) one-tail	0.0027	
t Critical one-tail	2.9200	
P(T<=t) two-tail	0.0054	
t Critical two-tail	4.3027	

Table 11: T-test with ROA

4.4 Agency Cost

All three metrics are estimators of the level of agency cost, however, the results for each metrics varied greatly. AC1 is invalidated as the lack of market price for Emirates Airline share prices creates a problem to generate market value for comparison against its book value. Since this is a paired test, it is crucial to remove AC1 for a bias-free result.

A general observation for AC2 weighted by ROA indicates a lower level of agency cost for DSOE than ISOE because ISOE is able to generate greater net income from its existing assets. In AC3, however, there is no apparent differences between the mean of both ISOE and DSOE which signals an analogous relationship.

List of Airlines	Types	AD1 = Market-to-book ratio of equity		AD2= Net Income/Total Asset		AD3= (Operating Income before Depreciation-Interest-Tax-Depreciation)/Total Asset	
Finnair	DSOE	0.398	0.16	0.020	0.01	0.055	0.04
Garuda		0.000		0.000		0.001	
Air China Limited		0.090		0.016		0.064	
Singapore Airline	ISOE	0.197	0.00	0.005	0.02	0.020	0.04
Emirates Airline		N/A		0.019		0.044	
Turkish Airways		-0.198		0.022		0.042	

Table 12: Agency cost with ROA

There was a significant difference in the level of approximated agency cost AC2 weighted with ROA within the years of 2015-2016, $t(2) = 3.658 (> 2.92)$, $p=0.034 (< 0.05)$.

t-Test: Paired Two Sample for Means (weighted with ROA)		
	<i>DSOE</i>	<i>ISOE</i>
Mean	0.012	0.016
Variance	0.000	0.000
Observations	3.000	3.000
Pearson Correlation	1.000	
Hypothesized Mean Difference	0.000	
df	2.000	
t Stat	-3.658	
P(T<=t) one-tail	0.034	
t Critical one-tail	2.920	
P(T<=t) two-tail	0.067	
t Critical two-tail	4.303	

Table 13: T-test with AC2 with ROA

There was no significant difference in the level of approximated agency cost AC3 weighted with ROA within the years of 2015-2016, $t(2) = 0.406 (< 2.92)$, $p=0.362 (> 0.05)$.

t-Test: Paired Two Sample for Means (weighted with ROA)		
	<i>DSOE</i>	<i>ISOE</i>
Mean	0.040	0.035
Variance	0.001	0.000
Observations	3.000	3.000
Pearson Correlation	0.997	
Hypothesized Mean Difference	0.000	
df	2.000	
t Stat	0.406	
P(T<=t) one-tail	0.362	
t Critical one-tail	2.920	
P(T<=t) two-tail	0.724	
t Critical two-tail	4.303	

Table 14: T-test with AC3 with ROA

5. DISCUSSION AND ANALYSIS

This section will address the research questions established earlier. Following a logical order of discussion, it is crucial to first highlight the differentiating factors between the different ownership structures. The methodology used to emphasise the differences in ownership structure between DSOE and ISOE is through the different levels of transparency, debt and internationalisation. The second part of the discussion will be the impact of agency cost according to the different ownership structures. This method is reliant on the estimation of agency cost through financial performances of the airline. All conclusion of hypothesis is based on the statistical significance of paired sample mean t-test at alpha level=0.05.

5.1 Differentiation of ownership structures

Under the transparency analysis, all analysis showed no significant differences between DSOE and ISOE. Although there exist strong arguments for ISOE being more transparent than DSOE stating the strong advocacy of ISOE for transparent measures (Kern, 2008), the results using similar scoreboard measurement do not reflect the convention. This could be attributed to 2 possible reasoning, the incompatibility of Truman's scoreboard in

providing a fair comparison between the two structures as well as the transparency being dependent against country level of transparency, rather than ownership structure.

The incompatibility stems from the difference in target sample and the variables used. In Truman's original scoreboard, the target sample was sovereign wealth funds, as compared to the sample of individual companies within the pool of sovereign wealth funds or governmental agencies. This means that there exist a new set of assumption of trickle-down effect from the macro ownership structure to the individual firms. However, there is a possibility that individual airline companies are not representative of the macro ownership structure, hence do not possess similar features as when companies are grouped collectively in their sovereign wealth pool. Another explanation of intrinsic differences of samples are that airline companies could possess a unique set of transparency guidelines that are not explicitly tested in this research. For example, the use of Airline Disclosure Guide (ADG) established by the IATA Industry Accounting Working Group (IAWG) that can better estimate the reporting standards and transparency of the airlines compared. Further research into the specific dependency of airline and sovereign wealth fund is therefore important to reinforce the findings of this paper.

Also, the differences in variables is another possible factor that adds to the incompatibility of methodology. The original research had an independent segment on investment strategies of the funds, budgeting and relationship with international governmental organisations. However, due to the differences in sample targeted, those variables are not applicable. The addition of other variables is also utilised in the replacement of the original research. This posed the benefits of relevance however at the expense of reduced reliability in the research design.

Also, the lack of significant differences could be attributed to the classification by country being a stronger driver than ownership differences. According to Bushman, Piotroski and Smith (2004), a country's legal and judicial regime is a strong factor of the corporate transparency. Although the authors only test for financial and governance disclosure, the results showed a more significant divide between the different companies differentiated

with legal origins, patent rights, judicial system and political economy. It is therefore recommended to attempt the same test with different methodologies that are better suited for both ownership structures, airline specific variables and independent of country effects.

Under the debt analysis, it is concluded that levels of debt provided a significant contrast between the ownership. Although this is parallel to the discussion of contrast between the level of debt between structures, the findings however stand to contradict the conjecture that DSOE has higher debt levels than ISOE. The method employed to measure debt level within airlines is however rather myopic. The reason is that debt-to-equity ratio only provide for a comparison between the proportion of debt and equity financing. There is however a better scaled comparison which is the debt-to-enterprise value which can provide a more comprehensive understanding towards the level of debt unaffected by enterprise size. The drawback however is the inability to estimate the actual enterprise value of the firm, hence in this research, the use of debt-to-equity ratio remained practical and central to the analysis.

In order to improve, it is also recommended to include other elements of debts such as leasing and acquisitions, in order to provide a better application towards the airline industry. According to Gritta, Lippman & Chow (1994), the common phenomena of airlines embarking on strategic leasing will affect the debt-to-equity ratio. The authors further recommended for leasing to be considered as an important variable in the affecting of debt structure of individual airlines. Leasing information can be found in most annual reports and are generally reported according to the IAS 17 reporting guidelines (IFRS, 2017).

Under the internationalisation analysis, the levels of internationalisation between DSOE and ISOE is very significant and proved that ISOE is more international than DSOE. Although the results are proved to be successful, improvement via the addition of other internationalisation variables such as percentage of international assets can better critique the hypothesis for more reliable findings. In addition, testing the drivers of internationalisation – framework factors, conditioning factors and general environment

factors against the airline directly can be a better approximation of internationalisation (Belniak, 2015).

5.2 Impact on Agency Cost

Overall, the first section concludes that there is a significant distinction between DSOE and ISOE under the variables of debt and internationalisation. The second section will continue to examine the impact of the different structures on agency cost.

Across all the approximations for agency cost, AC1 is invalidated due to the lack of market share price for Emirates Airline. AC2 indicated for a strong presence of agency cost whereas AC3 shows a conflicting insignificance in result. The difference in these two methods is primarily the exclusion of tax, depreciation and interest. Although the exclusion of tax, depreciation and interest could provide a more accurate representation of gross profit, however this is unfair to when management inefficiency/agency cost can be reflected in the management of taxation, depreciation expense and interest rates as well. Therefore, the decision to measure agency cost solely on AC2 is based on the former reasoning.

In AC2, ISOE is performing 50% more efficiently and therefore has a lower agency cost than DSOE. The following are the results for the hypothesis according to the results in AC2:

H1 (rejected): ISOE has lower agency cost due to greater transparency pressures. This hypothesis is rejected primarily because of the indistinguishable level of transparency between the two ownership structures (table 7).

H2 (accepted): ISOE has lower agency cost due to the greater use of debt. This hypothesis is accepted because ISOE has 50% lower agency cost and greater use of debt with a confidence level of 98%.

H3 (rejected): ISOE has higher agency cost due to the international diversification. This hypothesis is rejected primarily because results concluded for ISOE having a lower agency cost.

H4 (accepted): ISOE has lower agency cost due to the international diversification. This hypothesis is accepted because ISOE has 50% lower agency cost and higher level of internationalisation with a confidence level of 99.73%.

The flaw in these conclusions is the lack of correlation test for causality between the structural differences and agency cost. The methods employed only measure the level of contrast between the two ownership structures, however, there could exist exogenous variables that affect the agency cost level. Therefore, the research objective to investigate the relative importance of each characteristic in impacting agency cost is weakly established. A proposal for the use of more airlines and regression test against different independent ownership structure can be conducted for the understanding of the correlations.

5.3 Application to Airline Industries

The airline industry today operates in a spectrum of ownership structures, ranging from privatisation, full state-owned, partial privatisation, ISOE, etc. The difference in ownership structures is employed to seek strategic benefits in various functions. In this research, the strategic benefit targeted is the inefficient management due to agency cost.

In conclusion, the findings remained positive on ISOE having lower agency cost than DSOE. This means that ideally, airlines should employ the ISOE ownership structure within the branches of nationalisation. According to the research yield, the airlines will achieve 50% higher net income with the reduction of agency cost.

To remain practical, however, there must be an awareness of the potential inability to achieve similar results due to the impact from other firm-specific variables as discussed

earlier. Leasing, aircraft transparency guidelines, and country specific influence can create unknown challenges in the implementation of this ownership structure.

6. CONCLUSION

6.1 Main Findings

This research is segmented into 2 parts – the differentiation of ownerships and the test for agency cost. In the first part, research findings showed no difference for transparency between the ISOE airlines (presumed to exemplify higher transparency) and DSOE. This is explained by the incompatibility of Truman's scoreboard and the dependence of variable against country's level of transparency. This research therefore points to the need to neutralise country and parent-company dependent elements, such as investment strategies of the funds, budgeting and relationship with international governmental organisations.

The research however showed significant differences between ISOE and DSOE in the remaining 2 variables, debt and internationalisation. For debt level, ISOE has a higher level of debt than DSOE with a confidence level of 98%. For internationalisation level, ISOE has a higher level of internationalisation with a confidence level of 99.73%. The conclusions in the first part addresses the research question of identifying the general characteristics of direct state-owned or indirect state-owned companies.

In the second part, the focus of the paper shifts towards the presence and extent of agency cost within these ownership structures. Although both AC2 and AC3 have similar level of statistical reliability, results from AC2 is preferred to estimate agency cost due to the inclusion of tax, depreciation and interest for a more holistic analysis. The use of AC1 is nullified due to the lack of information for market prices of Emirates airline.

The results according to AC2 are that ISOE performed 50% more efficiently than DSOE with a confidence level of 96.6%. This directly addresses the research question and

objectives in understanding the extent of difference in agency cost and statistically verifying the hypothesis of ISOE having a lower agency cost than DSOE in general.

Although the research attempt to emphasize the relationship between agency cost and state ownership structure in the airline industry for practical managerial purposes, it is found that further research with more data (greater pool of airlines from the respective structures and SWF-independent variables) is needed to establish a correlation and regression test to support this research.

6.2 Implications for International Business

International business is the main core of this research. The features of international business permeate every section of the paper, beginning from research questions to the analysis of findings. The formulation of research question started with a general overview of the international airline industry. It was the need for understanding the underlying strategic benefits of the state-ownership structures that prompted for this study. Across the literature review, there are numerous mentioning of international concerns, such as, the international politicizing of SOE and elimination of cross-country currency differences. The methodology (Truman's scoreboard) implemented also took into consideration the international applicability of the samples as it was being tested on 28 countries. Upon concluding the findings and future research, the use of standardised guideline for airline industry in diluting country specific features is suggested.

In the analysis of airline industry, the globalised nature of the airline operations provokes the need to understand the different measure they undertake to make operations more efficient. In this thesis, the airline industry is examined from an ownership perspective and measured with their agency cost. The findings and future research also indicates a strong need to consider a macro world-wide environment. The multi-variate factors that exist in an international business is hence demonstrated in the target sample used in this thesis.

6.3 Suggestions for Further Research

In order to address the flaws and improve the reliability of the research, there are several macro and variable-specific challenges that could be addressed in the future. The main macro challenge is the relatively weak response of this research towards the causality relationship between ownership structure and agency cost. The current research only draws upon the differences between the agency cost of the ownership structures, instead of demonstrating the correlation between specific elements contributed by the differences in ownerships. Therefore, further research should first consider this aspect of improvement.

The other suggestion for future research in relation to the methodology is the need for better guidelines for inclusion and exclusion of variables. As discussed earlier, there is a need to include testing for trickle down effect from a macro analysis, country-specific features that could skew the results of the tests and international guidelines on industry-specific variables such as Airline Disclosure Guide (ADG) established by the IATA Industry Accounting Working Group (IAWG) in the case of airline industry. The aim of future research is therefore to increase the relevance of test.

With regards to the level of debt, the formula used in this research (debt-to-equity) can be substituted with debt-to-enterprise value. This way, without the need to scale against ROA, this formula is able to provide a more comprehensive understanding towards the level of debt unaffected by enterprise size. The weakness of ROA-scaling assumes that the total asset of the company is a good estimation of enterprise value however it is not necessarily the case for most companies. Leasing is also under the components of debt that is essential to airline industries. From the discussion earlier, it is understood that leasing is an important factor in affecting debt structure hence should be weighed stronger in future research. Since most companies are required to provide leasing information under the IFRS accounting report system, the accessibility warrants itself greater presence in future research.

In the internationalisation aspect, it is recommended to include greater number of internationalisation variables to challenge the initial result in this research. Some examples include percentage of international assets, and testing for effects from framework factors, conditioning factors and general environment factors.

Lastly, general recommendations for future research are the extension of research scope into other industry, greater number of airlines and establish the independent assumptions required for this field.

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